LAB 5

GUIDED WALK THROUGH OF RESOURCES

The following files are listed below and reviewed in two videos to support a guided walk through of some resources you will start using in Lab 5. You may want to put the files in the same folder for easy reference as you prepare for and work on Lab 5.

In Lab 5, you will do your first lower level programming of the UART module on the microcontroller to implement serial communications. It is lower level programming because you are not using a library of functions that hide the UART details. You are writing code that directly accesses the registers for the UART (called DRA, or direct register access). Coding at this level requires not only an understanding of C, such as bitwise operations, but also of the associated UART and GPIO hardware units in the microcontroller.

This guided walk through of resources will help you navigate the documents having important information and gain a deeper understanding of the UART interface and programming. You can quickly scan through the videos to find information most helpful to you. Each video is about 20 minutes.

Here are the files used in the videos.

Video 1: (Lab5 walkthrough part1 Lab docs and UART slides.mp4)

1. lab5-intro.pdf
2. Lab5-Manual.pdf
3. Lab5-Prelab.pdf
4. mtg10-slides-UART.pdf
5. GPIO-UART-registers-tables.pdf

Video 2: (Lab5 walkthrough part2 Lab docs and TM4C datasheet.mp4)

1. Lab5-Manual.pdf
2. TI Tiva TM4C123G Microcontroller Datasheet
3. Bai book Chapter 8 example in Figure 8.73
4. REF_tm4c123gh6pm.h

Let me repeat advice we have been emphasizing in lab: **Your goal is to be aware of information so that you can find and read it in more detail if and when needed. You are not expected to read or know everything at once.** Take it one step at a time. Be patient but persistent and purposeful. What do you need to know? What do you know that you can build on? What don't you know that might take more effort? Where or how might you get started? (Arthur Ashe: "Start where you are. Use what you have. Do what you can.")